

CLAIMS:

1. A tap for a liquid or gas cylinder, particularly of a vehicle, such as a trailer, comprising:

a tap body having a longitudinal axis, a root end portion having a threaded section on an outer circumferential surface thereof, and a main body portion on one axial end of said threaded section, the other axial end of said threaded section adapted to be threaded into a tap aperture of a gas or liquid cylinder;

an inversed seat primary valve located in said main body portion and having an annular seat surface and an annular sealing ring fluid tightly engageable with the seating surface, one of said seat surface and said sealing ring being mounted stationary in said valve body;

a secondary check valve axially spaced from the other axial end of said threaded section, whereby said check valve is in the cylinder interior when the tap is fixed to the cylinder to prevent damage to the check valve by lateral shearing forces acting on the tap body externally of the cylinder, said secondary check valve having a check valve element spring biased towards a closed position;

a stem axially movably mounted in said tap body, said stem extending through said one of said seat surface and said sealing ring, the other of said seat surface and said sealing ring being on said stem on a side of said one of said seat surface and said sealing ring that faces towards the root end portion, said stem having an extension portion prolongating said stem from said primary valve to extend into said root end portion; and

a stem actuator coupled to said stem to move said stem axially in one direction to open both of said valves and in an opposite direction to allow said check valve to close and to close said primary valve.

2. The tap of claim 1, wherein a reduced diameter section extends axially from the other axial end of said threaded section and a check valve seat surface is formed adjacent a free end of said reduced diameter section.

3. The tap of claim 2, wherein the check valve element comprises a ball element engageable with said seat surface, said ball element and the check valve biasing spring being retained in an apertured cup-shaped member secured to said reduced diameter section.

4. The tap of claim 2, wherein the check valve element comprises a piston engageable with said seat surface, said piston and the check valve biasing spring disposed about the piston being retained in an open-ended sleeve tube secured to said reduced diameter section.

5. The tap of claim 1, wherein the check valve element is disposed within said reduced diameter section and is engageable with a seat surface formed intermediate the ends of the reduced diameter section.

6. The tap of claim 1, wherein a fluid flow passage is formed in the tap body about said stem, an internal thread being formed in a wall of said fluid flow passage in said root end portion axially between opposite ends of the threaded section thereof.

7. The tap of claim 1, wherein in the closed position of the primary valve the free end of the stem extension portion is spaced from the check valve

element so that when the stem is moved in said one direction the primary valve is opened first and when said stem is moved in said second direction the check valve is allowed to close first.

8. The tap of claim 1, wherein the stem has the extension portion fixedly secured thereto.

9. The tap of claim 1, wherein the stem has the extension portion integrally formed in one piece therewith.

10. A tap for a gas or liquid cylinder, comprising:

a tap body having a root end portion, said root end portion having a threaded section, a free end, and a reduced diameter section between said threaded section and said free end;

an elongated stem mounted in said tap body, said stem having a longitudinal axis;

an inverted seat primary valve provided in said tap body at a side of the root end portion opposite said reduced diameter section and said free end;

a secondary check valve spring biased to a closed position, said secondary check valve being mounted to said reduced diameter section;

wherein said stem is axially movable in a first direction towards said secondary check valve to open said primary valve and to open said secondary check valve against the biasing spring force to permit fluid flow through said tap body from an inlet to an outlet thereof, and in a second opposite direction to permit said secondary check valve to be closed by said biasing spring and to shut-off fluid flow from said inlet to said outlet of said tap body.

11. The tap of claim 10, wherein a check valve seat surface is formed adjacent a free end of said reduced diameter section.

12. The tap of claim 10, wherein said check valve comprises a ball element engageable with said seat surface, said ball element and the check valve biasing spring being retained in an apertured cup-shaped member secured to said reduced diameter section.

13. The tap of claim 10, wherein said check valve comprises a piston engageable with said seat surface, said piston and the check valve biasing spring disposed about the piston being retained in an open-ended sleeve tube secured to said reduced diameter section.

14. The tap of claim 10, wherein the secondary check valve is disposed within said reduced diameter section and comprises a check valve member engageable with a seat surface formed intermediate the ends of the reduced diameter section.

15. The tap of claim 9, wherein a fluid flow passage is formed in the tap body about said stem, an internal thread being formed in a wall of said fluid flow passage in said root end portion axially between opposite ends of the threaded section thereof.

16. The tap of claim 10, wherein in the closed position of the primary valve a check valve actuating end of the stem is spaced from the check valve element so that when the stem is moved in said one direction the primary valve is opened first and when said stem is moved in said second direction the check valve is allowed to close first.